

Appl. No. 09/670,661
Reply to Office action of 06/04/2003

Page 3

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): A fast-fluidized bed reactor for the conversion of a feedstream comprising an oxygenate by contact with fluidized catalyst particles to produce a product stream comprising light olefins, said reactor comprising:

- a reaction vessel defining a disengaging zone, a lower subadjacent reaction zone, a product outlet for withdrawing the product stream from the disengaging zone, and a feed inlet for said feedstream communicating with the lower reaction zone;
- a partition sealingly disposed about an intermediate portion of the reaction vessel to segregate the lower reaction zone from the disengaging zone;
- a riser extending vertically within the reaction vessel from the lower reaction zone into a central section of the disengaging zone, in fluid communication with the lower reaction zone, for conducting the product stream and fluidized catalyst particles and defining a discharge opening within said disengaging zone for discharging the product stream and fluidized catalyst particles, said discharge opening being tangentially oriented for imparting a tangential velocity to the product stream and fluidized catalyst particles;
- a separation vessel disposed over said riser in the disengaging zone and surrounding said discharge opening to separate gaseous products from fluidized catalyst particles, said separation vessel having a lower portion defining a particle outlet for discharging fluidized catalyst particles and said separation vessel defining a gas recovery outlet for withdrawing gaseous fluids from the separation vessel;
- a dense phase zone defined by a portion of the lower reaction zone located below said intermediate portion of the reaction ~~zone~~ vessel;
- at least one catalyst recirculation standpipe for conveying fluidized catalyst particles from the disengaging zone to the dense phase zone;
- a spent catalyst standpipe in fluid communication with the disengaging zone for removing fluidized catalyst particles from the disengaging zone; and
- a regenerated catalyst standpipe for delivering regenerated catalyst particles to an intermediate portion of the reaction zone a point above the dense phase zone.

Appl. No. 09/670,661
Reply to Office action of 06/04/2003

Page 4

Claim 2 (original): The fast-fluidized bed reactor of claim 1 further comprising a feed distributor disposed over the feed inlet supporting a dense phase zone in the lower reaction zone.

Claim 3 (original): The fast-fluidized bed reactor of claim 2 wherein the feed distributor comprises a flat sieve plate.

Claim 4 (original): The fast-fluidized bed reactor of claim 1 further comprising at least one cyclone separation stage located within the disengaging zone in fluid communication with the gas recovery outlet;

Claim 5 (original): The fast-fluidized bed reactor of claim 1 wherein the gas recovery outlet is in fluid communication with at least one cyclone separation stage, the cyclone separation stage being in fluid communication with the product outlet.